



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,223	04/02/2004	Shinji Noma	542-012.008	2427

4955 7590 08/31/2006

WARE FRESSOLA VAN DER SLUYS &  
ADOLPHSON, LLP  
BRADFORD GREEN, BUILDING 5  
755 MAIN STREET, P O BOX 224  
MONROE, CT 06468

EXAMINER

WU, IVES J

ART UNIT PAPER NUMBER

1724

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/817,223

Applicant(s)

NOMA ET AL.

Examiner

Ives Wu

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

- (1). Applicants' Remarks and Amendments filed on June 30, 2006 have been received. Claim 2 is cancelled. Claim 1 is amended to incorporate with the limitation of claim 2. The rejection of claim 2 in the prior Office Action dated March 27, 2006 is removed in response to the cancellation in Applicants' Amendments filed on June 30, 2006. The rejection for claim 1 in prior Office Action dated March 27, 2006 is modified and presented together with claims 3-5 in the following paragraphs.

### *Claim Rejections - 35 USC § 102*

- (2). The text of those Section Title 35 U. S. Code not included in this Office Action can be found in the prior Office Action dated March 27, 2006.
- (3). **Claims 1, 3 ~ 5** are rejected under 35 U.S.C. 102(b) as being anticipated by Noma et al (JP 2002-003609).
- (4). Noma et al (JP 2002-003609) disclose the resin composition having superior gas barrier and appearance characteristics, furthermore superior processability for 2<sup>nd</sup> processing. The resin composition is manufactured by blending in a molten state (A) a saponified copolymer of ethylene-vinyl acetate which has content of 50 wt% or less, (B) a water swellable, lamellar inorganic compound, (C) a water soluble resin (Abstract).

Especially as a water bloating tendency stratified inorganic compound B used for the patentee's invention, without being restricted, clay minerals, such as smectite and a vermiculite, a synthetic mica etc, and a montmorillonite, beidellite, nontronite, hectorite. These may be natural things or could be compounded ([0012], line 1-5). If the degree of water swellable is taken into consideration, a montmorillonite is desirable as a water bloating tendency stratified inorganic compound B ([0013], line 1-2).

The blending ratio of component A-EVOH is 100 wt%, component B-a water bloating tendency stratified inorganic compound is 0.1 to 20 wt% of solid parts ([0033], line 1-5).

In carrying out melting mixing, there is especially no limit, for example, can perform it using well-known melting kneading (mixing) equipments, such as a melting extruder, a Banbury mixer, a twin screw extruder is suitably used especially in respect of the stability of melting

Art Unit: 1724

kneading ([0029]). The preferable ratio of length to diameter (L/D) is 20-80 of a twin screw extruder ([0030], line 1-3). The residence time in the inside of the extruder of a resin constituent is chosen from the range for 10 – 600 seconds ([0039], line 7-8). The rotational frequency of a screw is chosen from the range of 50 – 500 rpm ([0040], line 1).

Moreover, at least one side of the layer which can fully demonstrate the operation effectiveness when especially the moldings of layered product is presented, and specifically consists of this resin constituent although the resin constituent obtained by the manufacturing method can be used as a moldings of a simple substance – a thermoplastics layer etc, -- a laminating – carrying out – a multilayer – a layered product – using as a moldings is useful ([0045]). In manufacturing this layered product, carrying out the laminating of other base materials to one side or both sides of a layer which consist of this resin constituent ([0046], line 1-2).

(5). As to the resin composition prepared by melt-mixing copolymer A having water content of 20 to 50 wt% and inorganic compound B in an extruder under the condition:  $200 < R * W < 8000$  wherein R is a residence time (second) of A, B in extruder, and W is a consumed electric power (kW) of the extruder in **independent claim 1**, Noma et al disclose the component A – a saponified copolymer of ethylene-vinyl acetate having water content of 50 wt% or less. It is noticed that this is product-by-process claim, it would give little weight to the process limitation, *In re Thorpe*, 227 USPQ 964 (CAFC 1985).

As to component B having a cation exchange capacity of at least 100 meq/100g in **independent claim 1**, Noma et al disclose the montmorillonite either in natural or compounded state recited in paragraph (2) which has cation exchange capacity of 100 meq/100g.

(6). The same rationale of rejection for **claims 3-5** has been recited in the prior Office Action dated March 27, 2006.

### ***Response to Arguments***

Applicant's arguments filed on June 30, 2006 have been fully considered but they are not persuasive.

Art Unit: 1724

(7). Applicants point out that the layer-structured component of Montmorillonite used in Examples in prior art references Noma et al (JP 2002-003609) having cation exchange capacity 87 meq/100g. However, the montmorillonites have comparative high base-exchange capacities, viz., 60-100 as evidenced by Hauser (US002531427) - Col 2, line 32-37. The clay substrates of an organophilic clay are smectite-type clays, particularly smectite-type clays that have a cation exchange capacity of **at least 75 milliequivalents per 100 grams of clay**. Smectite-type clays preferred synthetically also can be utilized, for example, **montmorillonite**, bentonite, beidelite, hectorite, saponite, and stevensite as evidenced by Herfert et al (US20050245393A1) – [0132],[0133]. Therefore, claims 1,3-5 are pending presently.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1724

Date: August 28, 2006

**DUANE SMITH**  
**PRIMARY EXAMINER**

*D. Smith*  
*8-29-06*